

Is Emergency Department Syndromic Surveillance Useful for Monitoring General Illness Trends?



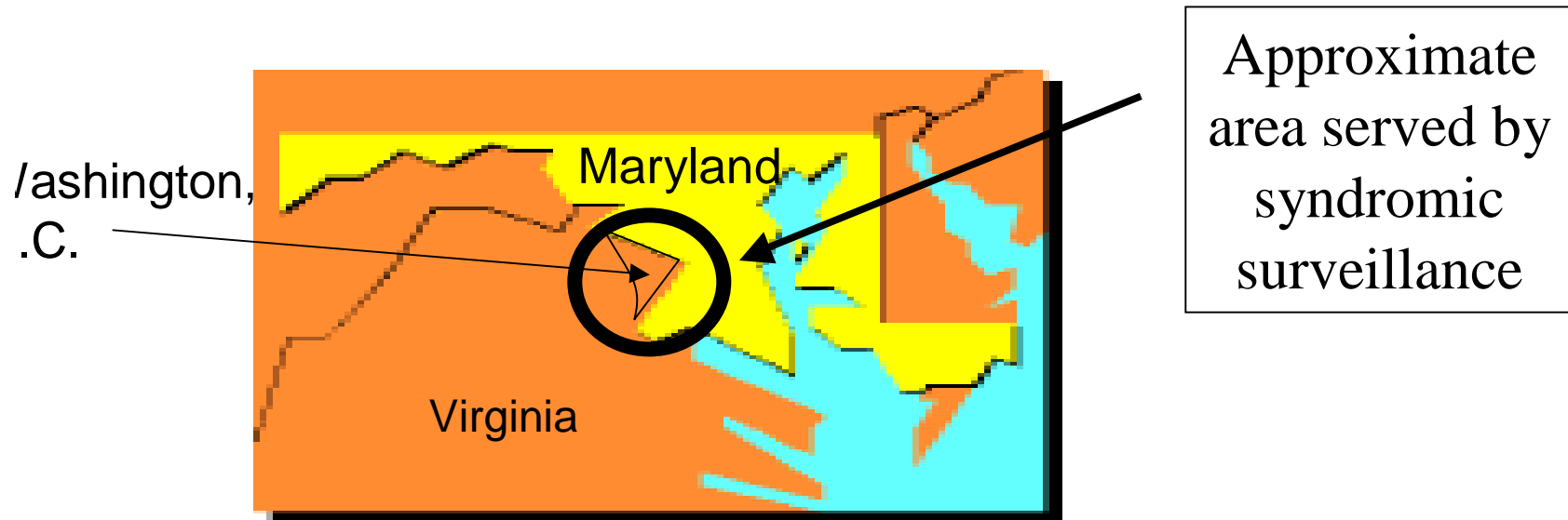
Leslie Edwards, MHS

Division of Outbreak Investigation

Maryland Department of Health and Mental Hygiene

Syndromic Surveillance in the National Capitol Region

- Hospitals from Maryland (n=8), Virginia (n=6), and the District of Columbia (n=6) involved in the overall project



- Only data from the 8 Maryland hospitals was analyzed for this abstract

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Syndromic Surveillance in Maryland



- ED logs faxed daily to Maryland Department of Health from each hospital's Infection Control Practitioner (or their designee) in the morning
- Each log entry is coded into 1 of 8 syndromes
 - Death
 - Sepsis
 - Rash Illness
 - Respiratory Illness
 - GI illness
 - Unspecified Infectious Illness
 - Neurological Illness
 - Other
- Coding based on chief complaint for most EDs
- Relative proportions of syndromes compared to previous days (using various techniques)
- When thresholds are exceeded, follow-up is performed

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Respiratory Illness Category



- **Accepted chief complaints:**

- cough
- respiratory distress
- shortness of breath
- dyspnea
- hypoxia
- pneumonia
- Wheezing
- Asthma
- Croup
- Bronchitis
- Chest pain in person , 50 yo
- Croup

- **Excluded chief complaints:**

- pharyngitis
- sore throat
- stuffed nose
- nasal congestion
- URI, listed alone
- cold, listed alone
- tonsilitis
- palpitations
- chest pain following trauma
- CHF
- COPD
- tachycardia/bradycardia

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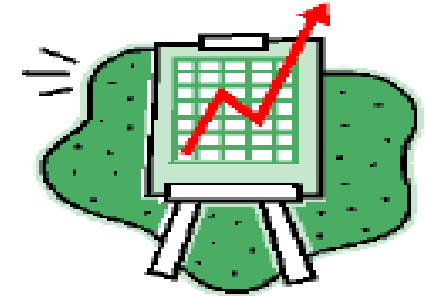
Methods



- The daily percentage (%) of ED visits coded as “respiratory” was averaged by week
- The total number of respiratory outbreaks reported each week was calculated
 - Respiratory outbreaks include:
 - *Influenza* or influenza-like illness
 - Pneumonia or acute febrile respiratory disease
 - Legionellosis
 - Psittacosis
 - Pertussis



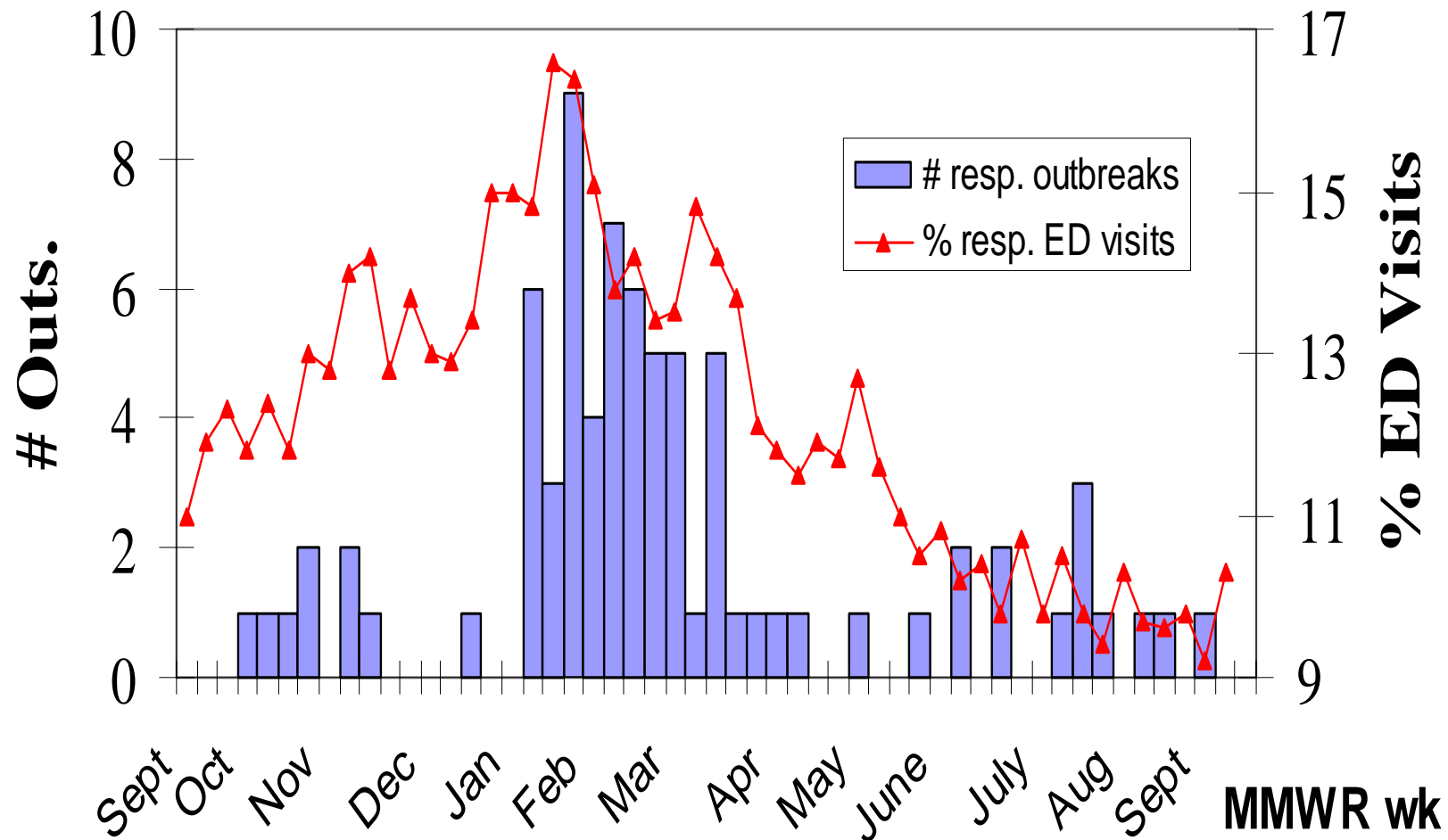
Methods, continued



- **Kappa statistics** were calculated correlating weeks when the average proportion of respiratory ED visits increased by $\geq 10\%$ to weeks when reported respiratory outbreaks increased by ≥ 2
- *Note:* **Kappa statistic** is a measurement which compares the agreement against that which might be expected by chance.
- Possible values for **Kappa** range from:
 - + 1 (perfect agreement)
 - 0 (no agreement above that expected by chance)
 - - 1 (complete disagreement).



% Resp. ED Visits/wk vs. # Resp. Outbreaks/wk, Sept 2001 - Sept 2002



Results



- **Emergency Department (ED) Respiratory visits**
 - Ranged from 11 - 16.6% of total ED visits each week
- **Respiratory outbreaks**
 - Ranged from 0 – 9 outbreaks reported each week
- **Kappa statistics**

<u>Comparison period</u>	<u>Kappa</u>	<u>Agreement</u>
Same week	- 0.17	poor
1 week lag	0.30	fair
2 week lag	0.61	substantial
2 week lag w/1 adjustment	0.76	substantial

- *Note: lag occurred between week of syndromic surveillance data reported and week of outbreaks reported*



Conclusions



- Syndromic surveillance data may reflect trends in respiratory illness approximately 2 weeks earlier than trends seen using traditional disease detections systems (such as outbreak reports)



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